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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/578,228	05/24/2000	Robert L. Heimann	EL017RH-2	4626

7590 04/15/2003
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EXAMINER

MULLINS, BURTON S

ART UNIT PAPER NUMBER

2834

DATE MAILED: 04/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/578,228

Applicant(s)

HEIMANN ET AL.

Examiner

Burton S. Mullins

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claims 20-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Recitation "at least one silicate and silica" or "silica and at least one silicate" in claims 20-25 is vague and indefinite. The specification p.7, lines 2-3 states: "The terms silica and silicate containing materials are used interchangeable herein." Does this mean that silica is a silicate, and vice versa? Lines 3-18 of p.7 seems to imply that the term "silica" (SiO_2) includes silicates (salts or esters from silicic acid) but that silicates do not necessarily include silica or SiO_2 , per se. Clarification and/or amendment is requested.
2. Recitations "said substrate" and "adjacent metal molding" in claim 22 are vague and indefinite and lack antecedent basis. In claim 28, "the borate composition" lacks antecedent basis.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 20-27 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fahy (US 5,488,984) in view of Parkinson (US 3,839,256). Fahy generally teaches a method for manufacturing squirrel-cage rotors including treating high-permeability steel core laminations 5 with a solution including sodium nitrite, and injecting molten aluminum therein to produce rotor bars 15 and end rings 17 (c.3, lines 19-25; Figs.1-2). The solution prevents

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soldering of the aluminum to the steel (abstract). Fahy does not teach a coating comprising at least one silica containing composition having at least one silicate and silica and having a basic pH.

Parkinson teaches an electrical insulation coating composition for magnetic cores comprising: a coating composition comprising at least one silica containing composition (e.g., sodium silicate, c.2, lines 50-53, Example 6) having at least one silicate and silica and having a basic pH (sodium silicate has basic pH). Among other advantages, Parkinson's coating provides good insulation characteristics and improved handling during manufacture since the coating is not acidic and corrosive (c.2, line 52-c.3, line 10).

It would have been obvious to one of ordinary skill at the time of the invention to modify Fahy and provide a silicate/silica solution per Parkinson since this would have been desirable to provide good insulation characteristics to the laminations and improve handling thereof during rotor manufacture.

Regarding claim 21, the aluminum bars 15 and end rings 17 in Fahy partially encapsulate the rotor laminations.

Regarding claims 22-24, as best understood, the coating separates and electrically insulates the laminations from the molded aluminum in Fahy and Parkinson.

Regarding claim 26, Parkinson teaches polymers (c.7, lines 17-25).

5. Claims 20-27, 28-29 and 31-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fahy (US 5,488,984) in view of Heimann (US 5,714,093). Fahy generally teaches a method for manufacturing squirrel-cage rotors including treating high-permeability steel core laminations 5 with a solution including sodium nitrite, and injecting molten

aluminum therein to produce rotor bars 15 and end rings 17 (c.3, lines 19-25; Figs.1-2). The solution prevents soldering of the aluminum to the steel (abstract). Fahy does not teach a coating comprising at least one silica containing composition having at least one silicate and silica and having a basic pH.

Heimann teaches a gel coating for inhibiting corrosion of ferrous metals comprising a base made of, among others, silicate esters (c.14, lines 48-49) and further including a thickener such as silica (c.14, line 59), or additives including silica for tailoring thermal resistance (c.15, lines 48-56). Heimann further teaches: "The gel includes buffers in sufficient quantity to enable the gel to buffer pH in the range in which the metal to be corrosion-protected is naturally passive to corrosion. For protecting steel, iron or iron alloy, a gel comprising a polyalphaolefin (1-decene) base and about 10% by volume sodium silicate, about 10% by volume potassium silicate and about 10% by volume zinc borate has been found very effective. Such a composition, when applied to the steel, iron or iron alloy surface, provides a pH buffer for the metal in the pH range between 8-13" (c.14, lines 6-15).

It would have been obvious to one of ordinary skill at the time of the invention to modify Fahy and provide a silicate/silica coating per Heimann since this would have been desirable to prevent or retard corrosion of the metal laminations.

Regarding claim 21, the aluminum bars 15 and end rings 17 in Fahy partially encapsulate the rotor laminations.

Regarding claims 22-24, as best understood, the coating separates and electrically insulates the laminations from the molded aluminum in Fahy and Heimann.

Regarding claim 26, Heimann teaches polymers (c.14, lines 16-50).

Regarding claim 28, note that Heimann teaches zinc borate included in the gel composition (c.14, line 13).

Regarding claim 31, silica additives in Heimann (c.15, line 51) would include silicon carbide and silicon nitride.

Regarding claim 32, note acrylics and urethanes in Heimann (c.15, lines 3-15).

6. Claim 28, as best understood, is rejected under 35 U.S.C. 103(a) as being unpatentable over Fahy and Parkinson as applied to claim 25 above, and further in view of Miyosawa (US 4,016,129). Fahy and Parkinson do not teach a borate composition containing boric acid and sodium tetraborate.

Miyosawa teaches a silica coating composition including a boric acid and tetraborate (c.7, lines 28-34) used as curing agents for the coating (c.5, lines 50-52).

It would have been obvious to one of ordinary skill at the time of the invention to modify Fahy and Parkinson and provide boric acid and tetraborate per Miyosawa since these compounds would have been desirable as curing agents for the coating.

7. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fahy and either Parkinson or Heimann as applied to claim 25 above, and further in view of Takimoto et al. (US 5,298,059). Fahy and Parkinson or Heimann do not appear to teach a ferromagnetic additive.

Takimoto teaches a silicate coating composition for rust prevention in steel plates (c.1, lines 20-24; c.5, lines 65-c.6, line 2) including ferromagnetic pigments such as iron oxides (c.4, lines 58-59).

It would have been obvious to one of ordinary skill at the time of the invention to modify Fahy and either Parkinson or Heimann and provide ferromagnetic additives per Takimoto since pigments would have been desirable to impart color to the coating.

8. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fahy and Parkinson as applied to claim 25 above, and further in view of Ettinger et al. (US 4,479,104). Fahy and Parkinson do not appear teach any of the additives in claim 31, e.g., silicon carbide, carbon, etc.

However, Ettinger teaches that it is well known to employ semi-conductive particles such as powdered silicon carbide in insulating enamel coatings for transformer cores, depending upon the degree of conductivity required at the impulse voltage (c.2, lines 27-46).

It would have been obvious to one of ordinary skill at the time of the invention to modify Fahy and Parkinson and provide a silicon carbide additive in the coating per Ettinger since such a semi-conductive compound would have been desirable for providing the degree of conductivity required at the impulse voltage.

Response to Arguments


9. Applicant's arguments with respect to claims 20-32 have been considered but are moot in view of the new ground(s) of rejection.

10. Applicant is requested to provide a clean copy of all pending claims in accordance with the revised amendment format published in the February 25, 2003 Official Gazette.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Burton S. Mullins whose telephone number is 305-7063. The examiner can normally be reached on Monday-Friday, 9 am to 5 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are 305-1341 for regular communications and 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0956.


Burton S. Mullins
Primary Examiner
Art Unit 2834

bsm
April 9, 2003